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NOTES AND BRIEF ARTICLES

[Unsigned notes are by the editor]

Dr. W. A. Murrill lectured on "Edible Wild Mushrooms" before the International Garden Club on the afternoon of Thursday, November 3.

Dr. L. O. Overholts, of the Pennsylvania State College, spent the latter half of December at the Garden, completing his study of *Pholiota*, an important genus of the fleshy fungi, for early publication in *North American Flora*.

Mrs. Alexander Taylor has presented to the Garden a number of colored drawings of fleshy fungi which she made in New Jersey, Massachusetts, and elsewhere. Dried specimens accompany the drawings.

Fungi detrimental to drugs—chiefly mildews, smuts, and rusts—are treated by Emil Herrmann in *Pharm. Zentralh.* **61**: 95-100. 1920.

Red or purple rice owes its color to a mold, *Monascus purpureus*. See an article on the manufacture of Chinese Ang Khak in the United States by Margaret Church in *Jour. Indus. Eng. Chem.* **12**: 45, 46. 1920.

A mosaic disease of Chinese cabbage, mustard, and turnip, which may be transmitted by aphids or by direct transfer of juice, was described and handsomely figured by E. S. Schultz in the *Journal of Agricultural Research* for October 15, 1921.

The stipitate polypores of Brazil have been described, figured, and keyed by C. Torrend in *Broteria* (Ser. Bot. **18**: 121-143. *pl.* 5-8. 1920). In the genus *Amauroderma* alone 34 species are

included, 3 of which—*A. Gusmanianum*, *A. picipes*, and *A. Mosselmanii*—are proposed as new.

Inonotus perplexus was found at Yama Farms, October 25, 1921, on a small dead trunk of *Populus grandidentata*. The cluster of overlapping pilei extended for ten inches or more up and down the trunk about a yard above the ground.

Professor F. S. Earle has returned to Porto Rico and is located at Central Aguirre, which is on the dry side of the island and not very good for fungi. He still finds a few specimens, however, which he shares with the Garden. Mrs. Earle is with him.

Professor A. F. Hutchinson, of the University of British Columbia, located at Vancouver, has sent for determination a box of woody fungi from his region. Among them is a handsome specimen of *Ganoderma oregonense*, collected on a dead stump of *Pseudotsuga taxifolia*.

Dr. H. H. Whetzel, who is this year acting as first agricultural assistant in the Department of Agriculture, Bermuda, has sent to the Garden herbarium his first collections of fungi from that region. Dr. Whetzel will have an unusual opportunity for working up the fungi of Bermuda.

The sclerotia-forming polypores of Australia are described and figured by Cleland and others in Trans. Proc. Roy. Soc. S. Austr. 43: 11-22. pl. 1-5. 1919. True sclerotia are said to be caused by *Polyporus mylittae* and *P. minor-mylittae*, and false sclerotia by *P. tumulosus* and *P. basilapiloides*.

Several large and handsome photographs of fleshy fungi have recently been presented to the Garden by Mr. A. W. Dreyfoos, of Mount Vernon, New York, who has been interested in the fungi for several years. Among them are group pictures taken in the field of *Chanterel floccosus*, *Clitocybe illudens*, and *Lepiota procera*.

According to Barlot (Compt. Rend. 171: 1014-1016. 1920), a 20-40 per cent aqueous solution of potash will distinguish *Mycena pura* from *Laccaria laccata*, the former giving a yellow and the latter a dark-brown color. *Gomphidius viscidus*, when similarly treated, gives a violet-brown color, while *G. glutinosus* yields a pale-yellowish brown.

Inonotus dryophilus was again fruiting on the white oak near the waterfall in the hemlock grove late in October, 1921. This time there were two clusters of hymenophores almost touching each other about two feet above the ground on the south side of the tree. These clusters were each about five inches broad and high, and projected about three inches from the trunk.

Canvas-destroying fungi were discussed by J. Ramsbottom in *Nature* (105: 563, 564. 1920), with various methods of inhibiting their development and growth. Species of *Macrosporium* and *Stemphylium* appeared to be the chief destructive agents, Soap, followed by alum and copper sulfate, gave good results at Malta; while sodium chromate proved superior in Saloniki.

Dr. Whetzel has sent in a number of fungi from Bermuda, among them *Laetiporus sulphureus*, *Lepiota cretacea*, *Auricularia nigrescens*, *Coriolus sericeohirsutus*, *Simblum sphaerocephalum*, *Polyporus Bracei*, *Hydrocybe ceracea*, and *Hydrocybe Earlei*. The last is a very beautiful species described and previously known only from Herradura, Cuba, where it grew in a pasture. According to Prof. Earle, the original collector, the colors become more brilliant after drying.

Coprinus micaceus was abundant in the horticultural grounds of the Garden on December 1. This was due to warm weather and late fall rains following a period of dry weather. About the middle of December several species of fleshy fungi were found growing in the woods at Blacksburg, Bedford, and other localities in Virginia. *Pleurotus ostreatus* and *Collybia velutipes* were abundant and rather to be expected, but species of *Cortinarius*—

like *C. semisanguineus*—and of *Russula*—like *R. emetica*—were also seen.

An unusually large cluster of the velvet-stemmed *Collybia*, *Gymnopus velutipes*, was observed November 20 on a decaying willow leaning over the Bronx River in North Meadows. This attractive edible species, which persists throughout the winter, was quite common during the autumn on various kinds of dead wood, but it seems to be partial to willow. The cluster in question measured six by eight inches and contained nearly a hundred distinct mushrooms—enough for a considerable meal. It has been suggested by Stewart that this species might easily be cultivated for food.

A large specimen of *Roskovites granulatus*, measuring over three inches in breadth, was found recently under white pine trees east of Conservatory Range 1. This rather common, edible species of *Boletus* grows naturally under pines and other evergreens and seems to be following *Boletus luteus* in its method of introduction into our grounds. The two species are much alike, but *B. luteus* has an ample white ring, is much more slimy, and the surface is usually darker. It will be remembered that this species, *B. luteus*, which is also edible, appeared several years ago under the pines near Conservatory Range 1 and has since spread about the base of individual trees, especially on the northern side, until basketfuls of it may be collected after the autumn rains.

While doing agricultural extension work in Franklin County, Washington, the writer found a fungus that was unknown to him. Upon returning to the State College the fungus was determined as a species of *Battarreia*. Further study has shown that the fungus coincides closely with *Battarreia laciniata* Underwood. This specimen was collected by the writer June 25, 1921, three miles west of Pasco, Franklin County, Washington. It was growing under a large sage brush, *Artemisia tridentata*, in pure silica sand near the banks of the Columbia River. For a description of this species, see Miss White's article on the "Tylostomaceae of North Amer-

ica," published in Torrey Bulletin 8: 421-444. 1901.—G. L. Zundel.

In Dr. Robert T. Morris's handy and excellent little book on "Nut Growing," published last autumn by the Macmillan Company, the chief fungous parasites of nut trees are treated together on pp. 153-158, and later under each tree separately. *Melanconium oblongum*, according to Dr. Morris, is gradually killing our native butternut and is also attacking the imported Japanese walnut. The hazel blight, *Cryptosporella anomala*, makes little headway among our native hazels, which are accustomed to it, but violently attacks the Asiatic and European species when they are imported. The bacterial walnut blight and chestnut blight are also considered, together with methods of combating both the fungous and insect pests of nut trees.

In a note in *Mycologia* 13: 58 the question was raised as to whether the cause of the difference between *Pucciniastrum* as it occurs on *Rubus triflorus* (*R. pubescens*) and on *R. idaeus aculeatissimus* (*R. strigosus*) lay in the parasites or in the hosts. In the summer of 1921, Mr. C. W. Bennett, working in the department of plant pathology of the University of Wisconsin, found that uredospores from *Rubus triflorus* did not infect *R. strigosus* or *R. occidentalis*, while those from *R. strigosus* infected that host abundantly and *R. occidentalis* sparingly, and on very young leaves only. As far as these few experiments go, they indicate that *Pucciniastrum arcticum* (Lagh.) Tranz. and *P. americanum* (Farl.) Arth. are distinct, and suggest that *Rubus strigosus* and *R. occidentalis* are not equivalent hosts of the latter.—J. J. Davis.

A FRAGRANT POLYPORE

Trametes suaveolens is a large white polypore frequent on decaying willow trunks in the northern hemisphere and easily dis-

tinguished, even at some distance, by its very agreeable, anise-like odor. In all my collecting, both in America and Europe, I never found this species on anything except willow until October 18, 1921, at Yama Farms, when I observed two large, fresh hymenophores about eight inches wide growing on a fallen dead trunk of the large-toothed aspen, *Populus grandidentata*, in the woods above the power-house west of Napanoch. The nearest willows were specimens of *Salix alba* in the Japanese garden of Yama Farms about a quarter of a mile away, and several hymenophores of *T. suaveolens* were conspicuous on their trunks. After this experience, I looked through our herbarium and found two other specimens collected on poplar, one by C. C. Hanmer (2058) at Hartford, Connecticut, many years ago, and the other by P. Wilson at Glenierie Falls, New York, August 31, 1914. The latter was at the base of living *Populus grandidentata* not very far from where I found my specimen. Mr. Hanmer did not mention the species of poplar on which his specimen grew. Poplars are near relatives of the willows, which accounts for their ability to serve as occasional hosts for this fungus.

W. A. MURRILL

SCHIZOPHYLLUM COMMUNE WITH A STIPE

Dr. C. E. Fairman's recent article, "The Fungi of Our Common Nuts and Pits,"¹ brings to mind the occurrence, some years back, of *Schizophyllum commune* on chestnuts imported from the Orient. The chestnuts had been placed in wet sand, in germinating trays, in the greenhouse of the United States Plant Introduction Field Station, at Chico, California. Buried to the depth of about two inches, they remained thus for a period long enough to induce germination, but, instead of young chestnut seedlings, a crop of the *Schizophyllum* appeared, much to the astonishment—and amusement—of the gardener, Mr. Henry Klopfer. On exhuming the nuts, it was found that nearly all had produced from their shells (not from their kernels) beautiful specimens of this common fungus, each specimen supported on a distinct stem that

¹ Proc. Rochester Acad. Sci. 6: 73-115. pl. 15-20. Sept. 1921.

was just long enough to permit of the formation of the sporophore in the light.

As *Schizophyllum commune* (*S. alneum* of some authors) is normally astipitate, this case of adaptation to conditions is worthy of notice, and the name, form *stipitatum*, might be conveniently employed to designate such deviations from the type. The specimens were not kept, unfortunately.

While the writer was located at Chico he also noted that this species, in its normal state, is not infrequent on wounds in the bark of orange trees.

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LOUIS C. C. KRIEGER

HYGROPHORUS CAPRINUS

A fine cluster of this species was sent to me last October by Miss Eliza B. Blackford, who collected it in low, swampy places in coniferous woods at Ellis, Massachusetts, where she has noticed it for ten years or more during October and early November.

The original description by Scopoli (Fl. Carn., ed. 2. 2: 438. 1772) is brief, but quite suggestive: "Pileus planiusculus. Lamellae amplae, continuae, simplices et ramosae. Stipes filamentosus. Habitat in subsylvestribus herbidisque locis. Pileus laevis; trium unciarum diametro, a Capris avidè quaesitus. Stipes digiti humani crassitie, plenus, nudus, solitarius, basi tenuior." The specific name was selected because goats were so fond of it.

A more detailed description was published by Albertini and Schweinitz in 1805 (Consp. Fung., p. 177) under their *Agaricus camarophyllus fuliginus*. Their variety *atramentosus* is quite different from our plant, the pileus being atrocoeruleous in color.

Krombholz gives a fair representation of the American form under *Agaricus elixus* Sow. in his plate 72, figure 22, but the other two figures are different. *Hygrophorus fuliginus* Frost is dark-colored and the gills are white, but the entire hymenophore is heavily covered with slime.

Fries transferred this species to *Hygrophorus* in 1838 and Karsten placed it in *Camarophyllus* in 1879, using Scopoli's origi-

nal specific name in combination. The only other specimen I seem to have is one collected by Bresadola in fir woods near Trent in October, 1897. The following notes were made from the fresh specimens sent by Miss Blackford:

Dry when received but evidently slightly sticky when moist, virgate with delicate fibrils, uniformly avellaneous or slightly darker, top-shaped when young, slightly umbonate at times, cespitose, 6-7 cm. broad; context thick, pure-white, unchanging, taste sweet, nutty, odor becoming mealy in drying; lamellae short-decurrent, distant, very broad in front, tapering behind, mostly simple, white or slightly dirty-white, never yellowish, entire on the edges; stipe slightly tapering downward, subglabrous, white or slightly avellaneous, fistulose to stuffed, 6 cm. long, 1 cm. or more thick above; veil none.

W. A. MURRILL

AN ADDITION TO THE DISTRIBUTION OF A RARE FUNGUS

Early in the morning, October 23, 1921, I started with some of my first-year students on a walk to Hueston's Wood, five miles north of Oxford, Ohio. We reached the wood at daylight, and within a half hour Miss Grace Townsend, a keen-eyed freshman, spied something rising from the soil which brought forth a burst of enthusiasm. On reaching the spot, I decided at once that she had discovered something which had escaped notice hitherto, though I have botanized through this 200-acre stretch of beech wood with my students for fifteen years, on five different occasions remaining in camp for ten or twelve days and botanizing vigorously every day. The globose peridium, a centimeter and a half in diameter, expanded abruptly from the top of a somewhat slender stipe, which was five centimeters high and a half centimeter in diameter. The outer wall of the peridium was free from the stipe in a manner wholly unknown to me, while from the top of this peridium there arose a peculiar little chimney-like ostiole, which was a millimeter high and a little more than a millimeter in diameter. The peridium was a pale brownish, and the stipe was darker with a reddish cast. In short, the whole appearance was such as to excite the curiosity of an experienced mycologist, accustomed

to finding curious fungi. Diligent search netted us three specimens in all.

On reaching home, I consulted C. G. Lloyd's mycological notes, and soon discovered that the curious fungus belonged to the genus *Tylostoma* or *Tulostoma*, the first spelling preferable and the second perhaps the original. I sent one of the plants to Mr. Lloyd for specific determination, supposing that the three plants belonged to one of the common species of the genus. Mr. Lloyd's reply was as follows: "Your *Tylostoma* is *Tylostoma verrucosum* as named by Morgan. It is a very rare species, and I have collected it but once. It has a regular, tubular mouth, where it differs from *Tylostoma campestre*."

Mr. Lloyd's monograph of the "TYLOSTOMEAE" appeared in 1906, at which time this rare species was known through but three collections, the original one by A. P. Morgan, near Preston, Ohio, the second by Mr. Lloyd himself, also in Ohio, and the third by W. H. Long, in Texas. There is nothing in Mr. Lloyd's letter to indicate that other collections have been made outside the original area, and ours seems to be the fourth locality from which this rare and interesting fungus has been collected.

Our three plants are very nearly of the same size, and the stipes are somewhat longer and the peridia somewhat smaller than Mr. Lloyd's Fig. 4, in plate 76 of his monograph.

BRUCE FINK

THE TORONTO MEETING

The thirteenth annual meeting of the American Phytopathological Society was held at Toronto, Canada, December 27-31, 1921. Prof. J. H. Faull, of the University of Toronto, had charge of the phytopathological exhibits. Section G of the A. A. A. S. and the Mycological Section of the Botanical Society of America assisted as usual with the program where the subjects and discussions were of mutual interest. Dr. Howe and Dr. Harper represented the New York Botanical Garden. Of the 2,000 present at the general meeting, about 200 were botanists. The next president of the Botanical Society of America is H. C. Cowles. The new

officers of the Phytopathological Society are: E. C. Stakman, president; N. J. Giddings, vice-president; Perley Spaulding, editor-in-chief, with L. L. Harter and G. M. Reed, assistants. The meeting next year will be held in Boston.

The most popular address was probably that by Prof. Bateson on "Evolutionary Faith and Modern Doubt." The symposium on the "Utility of the Species Concept" was important and well-timed. Dr. Millspaugh was unfortunately kept away by illness. Mosaic diseases occupied a prominent place at the meeting, about 20 papers being presented dealing with this subject. Dr. Duggar experimented with the mosaic disease of tobacco and found that the "virus" filters through porous cups as a liquid and therefore can not be a germ or similar organism. He termed it a "living fluid contagion." Experiments by Johnson, who has long worked on tobacco mosaic, led him to make the following statement: "It seems, therefore, that these results furnish evidence against the enzymatic theory of mosaic, while at the same time they favor parasitic hypothesis, since the temperature curve for the development of mosaic corresponds closely with that of the development of many of the plant pathogens."

Freda Detmers discussed the parasitic effect of *Poronidulus conchifer* on elm branches, claiming that it seems to be more injurious at times than suspected. L. M. Massey discussed "Fusarium-rot" of the Gladiolus. The corms become infected in the field and the rot advances in storage. The fungus seems to be *Fusarium oxysporum* Schecht. A poplar canker, caused by *Hypoxylon pruinaum*, was described by Povah. This disease is a trunk canker, which blackens the sapwood. It is very serious in certain sections. W. H. Snell spoke of the effect of heat upon the mycelium of certain structural timber-destroying fungi within wood, concluding that heating structures affected with decay to 47-48° C. by means of the heating systems, as has been suggested, would not kill the fungi even in moist cotton weave sheds, although the drying effect would be beneficial in certain types of structures. The application of these results to the effect of kiln drying upon structural timber decay was pointed out. R. J. Blair spoke of experiments with storing wood pulp in water to protect it from

fungi. An experiment was carried out using several kinds of commercial pulps in order to test the preservative value of water upon sheets of pulp immersed in it. After an interval of seventeen months the pulp was examined and tested for freeness. It was then made into small sheets of paper, which were tested for bursting strength and for tensile tear. The pulp stored in water came through the test in much better condition than that which was piled on a shed where it was given an opportunity to dry out.

W. A. MURRILL